REMARKS

The Applicants present application contains pending claims 1-34 of which claims 1, 12 and 23 are independent. Claims 1-34 were rejected by the Examiner in the Office Action mailed July 17, 2003. For the reasons set forth below, Applicants respectfully traverse the rejections.

Summary of Claimed Invention

The claimed invention is directed to the calling and use of object methods in an object-oriented environment from a dissimilar array-based (technical) computing environment supplied by a mathematical tool. When a method is called from the array-based computing environment, the data types accepted by the methods in the object-oriented environment are compared with the input parameter data from the array-based computing environment. The methods are ranked based on which methods can best accept the input parameters of the data from the calling array-based computing environment. Based on the comparison, the claimed invention automatically selects a method that best accepts the input arrays.

Rejections under 35 U.S.C. §103(a)

Claims 1, 3-9, 12, 14-19, 22, 23, 25-29 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cantin et al (EP 0 690 375 A2, hereafter "Cantin et al") in view of Hartmut Pohlheim ("Genetic and Evolutionary Algorithm Toolbox for use with MATLAB", hereafter "Pohlheim"). Claim 1 is an independent method claim upon which claims 2-11 are dependent, claim 12 is an independent medium claim upon which claims 13-22 are dependent, and claim 23 is an independent system claim upon which claims 24-34 are dependent. For the reasons set forth below, these rejections are respectfully traversed.

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Summary of Cantin et al.

Cantin et al is directed towards persistent object mapping in an object-oriented environment. The process discussed in Cantin et al is directed towards mapping a data structure from an object-oriented environment to a storage data type environment. Numerous data mapping methods are defined for each persistent object in the object-oriented environment and the most appropriate one is called to map the data structure of the persistent object to a persistent storage medium. There is no discussion of matching method parameters from the persistent objects to data from an array-based computing environment which is to be used as input data for the methods. There is also no discussion of invoking the method of the persistent object, but rather separate methods are created and used to perform the mapping of the data structure from the persistent object to the persistent medium.

Summary of Pohlheim

Pohlheim discusses the mapping of chromosome representations into phenotype decision variables using MATLAB, a technical computing environment. The discussion touches on the mapping of different data types into an array-based data type. Pohlheim also discusses (Section 3.1) the use of rank-based fitness assignment wherein variable data is ranked. Pohlheim does not discuss the calling, comparison and retrieval of object methods in an object-oriented environment from a technical computing/array-based computing environment using data from the array-based computing environment as input.

Argument

The reliance on the combination of Cantin et al and Pohlheim in the rejection of claims 1, 3-9, 12, 14-19, 22, 23, 25-29 and 34 is misplaced. Contrary to the Examiner's assertions in the Office Action of July 17th, 2003, the combination of references does not include all of the elements of the independent claims of the claimed invention. With regard to independent method claim 1, neither reference discusses the retrieving of method signatures containing lists of data types received by the method. Neither reference discusses the comparison of the data types listed in the method signatures with input parameters received from an array-based

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computing environment. The process discussed in Cantin et al uses a method from a separate object class to map a persistent object data structure to a persistent storage medium. The persistent storage medium data type is evaluated only to determine a target for the conversion process. The data type from the persistent storage medium is not evaluated as a potential input parameter into a method that belongs to the persistent object. The method performing the mapping is a separate method and performs only a matching process.

Similarly the generalized discussion of the object class DOG cited on page 5 of the Cantin et al reference is not the same as the step of retrieving a set of method signatures. Accordingly, there is no comparison of a set of method signatures to a possible input parameter data type in order to determine a best match. Additionally, as noted above, the method that is invoked is a separate mapping method performed on a data structure in the persistent object, not a method belonging to the persistent data object. The method accordingly does not correspond to a selected method signature(evaluated for a best match to an input parameter).

Cantin et al thus lacks the first, second and fifth steps of claim 1. The Examiner has admitted that it lacks the third and fourth steps of claim 1 (see Office Action of July 17th, 2003, page 2, third paragraph).

Pohlheim discusses the ranking of variable data (see Section 3.1). It does not discuss the ranking of a set of method signatures and does not discuss the ranking of a set of method signatures as a function of the comparison. As noted above, no comparison of acceptable parameters in a method in the persistent object to input parameters from a calling array-based environment is performed in Cantin et al. Thus, even if the ranking discussed in Pohlheim could be considered the equivalent of, or render obvious, the ranking of a set of method signatures(a proposition Applicants strongly contest), it is not performed as part of the function of the comparison (where "the comparison" is the comparison of acceptable parameters in a method in an object-oriented environment to input parameters from a calling array-based environment). Since the signatures are not ranked as a function of the comparison, they are also not selected from the ranking (the fourth step). The combination of references thus lacks all five steps of the method claim of independent claim 1. Since claims 2-11 are dependent directly or indirectly

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on claim 1 and include all of the elements of claim 1, the combination of references also fails to render claims 2-11 obvious and unpatentable.

Claim 12 is a medium claim corresponding to claim 1 and the claim 1 analysis is equally applicable. The combination of references lacks all five elements of the independent medium claim 12. Since dependent claims 13-22 are dependent directly or indirectly on claim 12 and include all of the elements of claim 12, the combination of references also fails to render claims 13-22 obvious and unpatentable.

Independent claim 23 is a system claim. Claim 23 includes a signature selector element which is used to rank a list of signatures corresponding to methods within the object-oriented environment with one of the methods subsequently being invoked. As previously discussed, the cited combination of references lacks the ranking of method signatures and the invoking of a method based on the ranking. Since all of the elements of claim 23 are not suggested, taught or disclosed by the cited combination of references, claim 23 is not rendered obvious by the combination of references. Additionally, since dependent claims 24-34 are dependent directly or indirectly on claim 23, and include all of the elements of claim 23, the combination of references also fails to render claims 24-34 obvious and unpatentable.

Addition 35 U.S.C. §103(a) rejections

Claims 2, 13 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cantin et al in view of Pohlheim in further view of Admitted prior art. Claims 10, 11, 20, 21, 31, and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cantin et al in view of Pohlheim in further view of Bill Venners ("Eternal Math"). Claim 30 was rejected under 35 U.S.C. §103(a) as being unpatentable over Cantin et al in view of Pohlheim in further view of John W. Eaton ("A High Level Interactive Language for Numerical Computations, Edition 3 for Octave Version 2.1x"). Claim 33 was rejected under 35 U.S.C. §103(a) as being unpatentable over Cantin et al in view of Pohlheim in further view of David M. Gay ("Symbolic-Algebraic Computations in a Modeling Language for Mathematical Programming"). All of these rejections are directed to dependent claims which are dependent upon the underlying independent claims 1, 12 and 23 discussed above. Since the combination of references discussed

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above fails to teach, disclose or suggest the underlying independent claims, and since none of
these additional references for the dependent claims supply the missing independent claim
elements discussed above, these rejections are also unsupported.

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Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. MWS-064 from which the undersigned is authorized to draw.

Dated: October 17, 2003

Respectfully submitted,

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